

ON THE FOOD HABITS OF CERTAIN DUNG AND CARRION BEETLES.

By CHARLES UPSON CLARK.

It is not generally known, I believe, that many of the beetles frequenting carrion and dung, feed to a greater or less extent on the maggots—fly larvæ—which they find therein. My attention was first called to this habit two summers ago. While collecting from a dead woodchuck which teemed with specimens of *Silpha surinamensis*, I saw a fly seized by one of the beetles, held up in the air and sucked dry. Looking more closely, I discovered that the *Silphas* were feeding on maggots, not as I had always supposed, on decaying matter. By careful observations made since then at Charlemont, Mass., on beetles found on dead squirrels and woodchucks and in dung, I have come to the conclusion that these beetles may be roughly separated into three divisions, according to the character of their food.

In the first division—those which feed on the dung or carrion wholly—I would place the Scarabæidæ, *Copris*, *Trox*, *Geotrupes*, *Aphodius*, the *Trichopteryx* grade and *Cercyon* and allied genera. It is possible, of course, that these latter small beetles, some very minute, feed on microscopic larvæ, but they seemed to be feeding on the dung or carrion.

Then come those which feed on the maggots to a limited extent. Such are *Silpha americana* and *S. noveboracensis*, *Necrophorus orbicollis*, *tomentosus* and *americanus*.

The third division comprises those which feed almost exclusively on larvæ. Here belong *Necrophorus marginatus*, *Silpha lapponica*, *S. surinamensis*, *Hister immunis*, *fœdatus*, *furtivus* and *depurator*, *Saprinus patruelis*, *Creophilus villosus*, *Listrotrophus cingulatus*, *Staphylinus mysticus*, *fossator* and *Philonthus* sp. I have no doubt that the smaller Staphylinidæ so abundant in such situations are also animal feeders, though I could not take them in the act. *Clerus quadriguttatus* I have frequently taken devouring Scolytid larvæ, and I feel sure that *Necrobia*, *Thaneroclerus*, etc., will be found to feed on maggots.

I hope that collectors in other localities will send the JOURNAL their observations on this subject. I cannot believe that the habit has not been noticed before; but I can find no mention of it in the books I have consulted, and I believe that collectors generally have gone on the supposition that these beetles feed on the substances in which they are found.